

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID: M02534A Sm. Tank  
Date Received: 06/12/08  
Date Extracted: 06/18/08  
Date Analyzed: 06/19/08  
Matrix: Water  
Units: ug/L (ppb)

Client: Alaskan Copper Works  
Project: PO M02534, F&BI 806134  
Lab ID: 806134-01 x10000  
Data File: 806134-01 x10000.044  
Instrument: ICPMS1  
Operator: hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	3,300,000
Nickel	5,760,000
Copper	3,210,000
Zinc	38,100
Iron (screen)	21,100,000

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	M02534B Lg. Tank	Client:	Alaskan Copper Works
Date Received:	06/12/08	Project:	PO M02534, F&BI 806134
Date Extracted:	06/18/08	Lab ID:	806134-02 x10000
Date Analyzed:	06/19/08	Data File:	806134-02 x10000.045
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	104	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Chromium	12,500,000
Nickel	11,900,000
Copper	2,030,000
Zinc	56,700
Iron (screen)	37,500,000

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Alaskan Copper Works
Date Received:	Not Applicable	Project:	PO M02534, F&BI 806134
Date Extracted:	06/18/08	Lab ID:	I8-222 mb
Date Analyzed:	06/19/08	Data File:	I8-222 mb.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	89	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Nickel	<1
Copper	<1
Zinc	<1
Iron (screen)	<250

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/25/08  
Date Received: 06/12/08  
Project: % of Acid, PO M02534, F&BI 806134  
Date Extracted: 06/18/08  
Date Analyzed: 06/18/08

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR SPECIFIC GRAVITY  
@ 15.56 °C**

Sample ID

Laboratory ID

Specific Gravity

M02534A Sm. Tank  
806134-01

1.12

M02534B Lg. Tank  
806134-02

1.25



**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 06/25/08

Date Received: 06/12/08

Project: % of Acid, PO M02534, F&BI 806134

Date Analyzed: 06/24/08

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR PERCENT ACID**

Sample ID

Laboratory ID

Percent Acid

M02534A Sm. Tank  
806134-01

5.2

M02534B Lg. Tank  
806134-02

7.7

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 06/25/08

Date Received: 06/12/08

Project: % of Acid, PO M02534, F&BI 806134

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 806103-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Chromium	ug/L (ppb)	<1	<1	nm	0-20
Nickel	ug/L (ppb)	2.08	1.98	5	0-20
Copper	ug/L (ppb)	58.2	57.0	2	0-20
Zinc	ug/L (ppb)	12.6	11.7	7	0-20

Laboratory Code: 806103-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chromium	ug/L (ppb)	20	<1	99	50-150
Nickel	ug/L (ppb)	20	2.08	96	50-150
Copper	ug/L (ppb)	20	58.2	76 b	50-150
Zinc	ug/L (ppb)	50	12.6	83 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	104	70-130
Nickel	ug/L (ppb)	20	97	70-130
Copper	ug/L (ppb)	20	100	70-130
Zinc	ug/L (ppb)	50	87	70-130

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 06/25/08

Date Received: 06/12/08

Project: % of Acid, PO M02534, F&BI 806134

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF WATER SAMPLES  
FOR SPECIFIC GRAVITY  
@ 15.56 °C**

Laboratory Code: 806134-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Specific Gravity	1.12	1.13	0.7	0-2

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 06/25/08

Date Received: 06/12/08

Project: % of Acid, PO M02534, F&BI 806134

**QUALITY ASSURANCE RESULTS  
FROM THE ANALYSIS OF WATER SAMPLES  
FOR PERCENT ACID**

Laboratory Code: 806134-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Percent Acid	5.2	5.1	2	0-20



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Data Qualifiers & Definitions

- a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 - More than one compound of similar molecule structure was identified with equal probability.
- b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte indicated may be due to carryover from previous sample injections.
- d - The sample was diluted. Detection limits may be raised due to dilution.
- ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb - The analyte indicated was found in the method blank. The result should be considered an estimate.
- fc - The compound is a common laboratory and field contaminant.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht - The sample was extracted outside of holding time. Results should be considered estimates.
- ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The result is below normal reporting limits. The value reported is an estimate.
- J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the compound indicated is likely due to laboratory contamination.
- L - The reported concentration was generated from a library search.
- nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The pattern of peaks present is not indicative of diesel.
- y - The pattern of peaks present is not indicative of motor oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Morrow, M.S.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

June 25, 2008



INVOICE #08ACU0625-1

Accounts Payable  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

RE: Project % of Acid, PO M02534, F&BI 806134 - Results of testing requested by  
Gerry Thompson for material submitted on June 12, 2008.

2 sample analyzed for Total Chromium, Copper, Nickel and Zinc by Method 200.8 @ \$85 per sample	\$ 170.00
2 samples analyzed for Specific Gravity @ \$30 per sample	60.00
2 samples analyzed for Percent Acid Content @ \$75 per sample	150.00
2 samples analyzed for Total Iron by Method 200.8 @ \$40 per sample	<u>80.00</u>
Amount Due .....	\$ 460.00

FEDERAL TAX ID #

(b) (6)

806134

## SAMPLE CHAIN OF CUSTODY

ME 06-12-08 A-4

Send Report To Geno Thompson  
 Company ALASKAN Copper Works  
 Address 628 S. Hawford St  
 City, State, ZIP Seattle WA 98134  
 Phone # 206-571-6083 Fax # 206-382-4809

SAMPLERS (signature) <u>[Signature]</u>	
PROJECT NAME/NO. <u>% of Acid</u>	PO # <u>MO2534</u>
REMARKS	

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## TURNAROUND TIME

☐ Standard (2 Weeks)☒ RUSH 7 days

Rush charges authorized by:

## SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	IIFS	Ca, Cu, Ni, Zn	FE	Spec. Gravity	% of Acid	
MO2534A		6/12/08	12:30pm	H <sub>2</sub> O	1							X	X	X	X	
SM. TANK																
MO2534B		6/12/08	12:30pm	H <sub>2</sub> O	1							X	X	X	X	
lg tank																

Samples received at 25 °C

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

Relinquished by: <u>[Signature]</u>	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Received by: <u>[Signature]</u>	<u>Geno Thompson</u>	<u>DOVO</u>	<u>ACB</u>	<u>6/12/08</u>	<u>1:30pm</u>
Relinquished by:			<u>FBC</u>	<u>6/12/08</u>	<u>2:00</u>
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Seattle, WA 98119-2029  
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e-mail: fbi@isomedia.com

June 25, 2008

Gerry Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on June 12, 2008 from the % of Acid, PO M02534, F&BI 806134 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
ACU0625R.DOC